



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,170	08/02/2001	Walter T. Burke	H052586.0003US0	7200
1200	7590	06/15/2004	EXAMINER	
AKIN, GUMP, STRAUSS, HAUER & FELD 711 LOUISIANA STREET SUITE 1900 SOUTH HOUSTON, TX 77002			LOPEZ, FRANK D	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 06/15/2004

19

Please find below and/or attached an Office communication concerning this application or proceeding.

CLD/19

## Office Action Summary

Application No.

09/921,170

Applicant(s)

BURKE, WALTER T.

Examiner

F. Daniel Lopez

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,8,9,11-15,18,19,21-24,26,27,29-31,33-39 and 41-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,8,9,11-15,18,19,21-24,26,27,29-31,33-39 and 41-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 22, 2004 has been entered.

**Response to Amendment**

Applicant's arguments filed March 22, 2004, have been fully considered but they are not deemed to be persuasive.

Applicant's arguments with respect to the current claims have been considered but are deemed to be moot in view of the new grounds of rejection.

Applicant argues and examiner initially agreed that Dailey does not show an annular flange embedded in an annular heel section, with a lip section abutting the heel section, but not the flange. Upon further consideration, the examiner disagrees. In Dailey, the annular flange (72) is embedded in grooves of the annular heel section (20), with a lip section (16, 18) abutting the heel section, and a backing plate (62), but not the flange.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC 102***

Claims 1, 3-5, 8, 11, 13-15, 18, 21, 23, 24, 26, 29, 31, 33, 34, 45 and 47 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shimer.

Claims 1, 3-5, 8, 11, 13-15, 18, 21, 23, 24, 26, 29, 31, 33-34, and 36-39 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cater.

Claims 1-5, 11-15, 21-24, 26, 29-31, 33, 35-37, 45 and 47 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Dailey. Dailey has a flange (72) covered by and bonded to a heel section (20), wherein a first end of the lip section (16, 18) abuts an end of the heel section, and contacts the backing plate (62), but not the flange (72).

***Claim Rejections - 35 USC 103***

Claims 36-38 are rejected under 35 U.S.C. 103 as being unpatentable over Shimer in view of Cater. Shimer discloses a piston head assembly comprising an annular resilient piston seal mounted on a piston hub; wherein the seal includes first and second annular heel sections (20) of a hard rubber (page 1 column 1 line 48-51) having a first hardness and first and second lip sections of rubber (part of 20 having different type of shading, page 1 column 2 line 48- page 2 column 1 line 5), having a second hardness less than the first hardness, connected with second ends of the first and second heel sections, respectively; with anterior and posterior surfaces of an annular flange (15) of the hub concentrically embedded into first ends of the first and second heel sections, respectively; but does not disclose that a substantially cylindrical middle section of hard rubber connects the first and second heel sections, and covers an outer surface of the flange.

Cater teaches, for a piston head assembly comprising an annular resilient piston seal mounted on a piston hub; wherein the seal includes first and second annular heel sections (10) of a material (page 2 column 1 line 21-35) having a first hardness and first and second lip sections of rubber (1, 2), having a second hardness less than the first hardness (e.g. page 1 column 2 line 45-46), connected with second ends of the first and second heel sections, respectively; with anterior and posterior surfaces of an annular flange (15) of the hub concentrically embedded into first ends of the first and second heel sections, respectively; that a substantially cylindrical middle section (20) of the first material connects the first and second heel sections, and covers an outer surface of the flange, for the purpose of engaging the cylinder wall, without causing excessive wear (page 2 column 1 line 33-39).

Since the configurations of the heel sections of Shimer and Cater are functionally equivalent in the piston seal art; it would have been obvious at the time the invention was made to one having ordinary skill in the art to include a substantially cylindrical middle section of hard rubber, to connect the first and second heel sections of Shimer, and covering an outer surface of the flange, as taught by Cater, for the purpose of engaging the cylinder wall, without causing excessive wear.

Claims 9, 19 and 27 are rejected under 35 U.S.C. 103 as being unpatentable over Shimer in view of Pittman. Claims 39 is rejected under 35 U.S.C. 103 as being unpatentable over Shimer in view of Cater, as applied to claim 36, and further in view of Pittman. Shimer and the modified Shimer discloses all the elements of claims 9, 19 and 27; and 39, respectively, as discussed above; but does not disclose that the second material is a polyurethane.

Pittman teaches, for a piston head assembly comprising an annular resilient piston seal mounted on a piston hub; wherein the seal includes an annular heel section (43) of a first low friction rigid plastic material (column 3 line 16-17) having a first hardness and a lip section (34, including 41, 42) of a second resilient material, having a second hardness less than the first hardness; that the second resilient material can be urethane (column 3 line 15-16, which includes a polyurethane).

Since the second materials of Shimer and Pittman are functionally equivalent in the piston seal art; it would have been obvious at the time the invention was made to one having ordinary skill in the art to use a polyurethane as the second material of Shimer, as taught by Pittman, as a matter of engineering expediency.

It is understood that a combination of teachings of Dailey and Handbook of Plastics, Elastomers and Composites would result in a rejection of claims 41-44, but since these claims have been rejected below, this rejection has not been made.

Claims 41-44 are rejected under 35 U.S.C. 103 as being unpatentable over Dailey in view of Handbook of Plastics, Elastomers and Composites. Dailey discloses a piston head assembly comprising an annular resilient piston seal mounted on a piston hub; wherein the seal includes an annular heel section (20) of a first low friction material (column 3 line 57-62) having a first hardness and a lip section (16, 18) of a second resilient material having a second hardness less than the first hardness (column 3 line 62-65); with an annular flange (72) of the hub concentrically embedded into a posterior portion of the heel section, with an outer portion of the posterior portion of the heel section surrounding a portion of an outer surface of the flange; but does not disclose that the first material is a polyurethane.

Handbook of Plastics, Elastomers and Composites teaches, that polyurethane has good abrasive resistance and low coefficient of friction (page 4.34 last two lines).

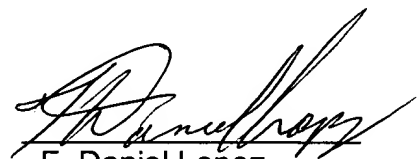
Since Dailey uses a low friction plastic for the first material, and Handbook of Plastics, Elastomers and Composites teaches that a polyurethane is a low friction plastic; it would have been obvious at the time the invention was made to one having ordinary skill in the art to use a polyurethane as the first material of Dailey, as taught by Handbook of Plastics, Elastomers and Composites, as a matter of engineering expediency.

Note that throughout the claims, a limitation concerning a "bumper section" (e.g. claim 36 line 11) is considered to be a name, and not define a limitation of the section. If applicant intends that "bumper section" should define a further limitation, this further limitation can be introduced into the claim.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is (703) 308-0008. The examiner can normally be reached on Monday-Thursday from 6:30 AM -4:00 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on (703) 308-1044. The fax number for this group is (703) 308-7763. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0861.



F. Daniel Lopez  
Primary Examiner  
Art Unit 3745  
June 14, 2004